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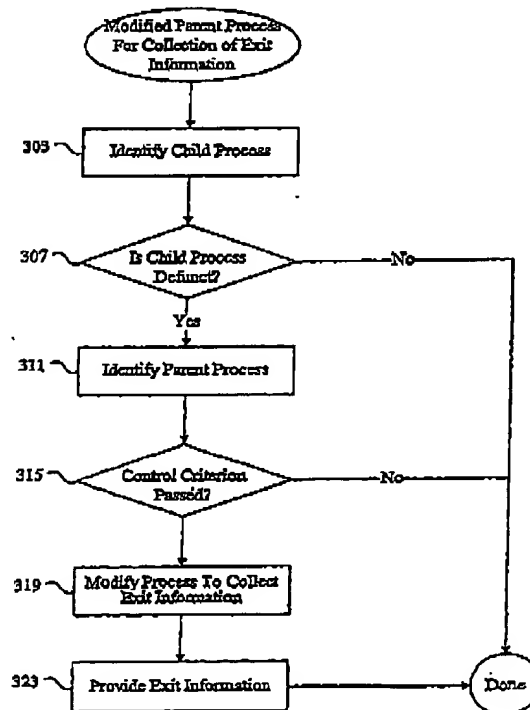
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(54) Methods and apparatus for managing defunct processes

(57) The present invention relates to managing defunct processes. A parent process that does not collect exit information associated with a child process may leave a defunct child process. A defunct child process is identified. The parent process of the defunct child process is modified. The parent process can be modified by changing an existing thread or instantiating a new thread to collect exit information associated with the child process. Collecting exit information causes the removal of the defunct child process.

Figure 3



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## EUROPEAN SEARCH REPORT

Application Number  
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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	ALMESBERGER W: "Re: /proc/nzombies - Message-ID: <fa.gnkk07v.1fgglqn@ifi.uio.no>" USENET NEWSGROUP MESSAGE, [Online] 3 March 2000 (2000-03-03), XP002355188 fa.linux.kernel Retrieved from the Internet: URL: http://groups.google.com/group/fa.linux.kernel/msg/cb90153e5fb8663a?dmode=source&hl=en [retrieved on 2005-11-22]	1,2,4-8, 14,15, 17,18	G06F9/48 G06F9/54
Y	* the whole document *	3,9-13, 16,19-24	
D,Y	US 6 002 870 A (FAULKNER ET AL) 14 December 1999 (1999-12-14) * column 2, line 13 - line 24 * * column 7, line 43 - line 49 *	3,9-13, 16,19-24	
A	PITCHER L: "Re: zombie - Message-ID: <39bfd1e4.459771105@news21.on.aibn.com>" USENET NEWSGROUP MESSAGE, [Online] 13 September 2000 (2000-09-13), XP002355189 comp.os.linux.misc Retrieved from the Internet: URL: http://groups.google.com/group/comp.os.linux.misc/msg/5a4eb46a89aa24b3?dmode=source&hl=en [retrieved on 2005-11-22] * the whole document *	1-24	TECHNICAL FIELDS SEARCHED (IPC) G06F
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 22 November 2005	Examiner Carciofi, A
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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Office

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of documents with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	HOXIE V: "Re: Kill a Zombie process? - Message-ID: <Dpow79.B4u@zebra.alphacdc.com>" USENET NEWSGROUP MESSAGE, [Online] 11 April 1996 (1996-04-11), XP002355296 comp.os.linux.misc Retrieved from the Internet: URL: http://groups.google.com/group/comp.os.linux.misc/msg/9e181805dd5b1354?dmode=sourc&hl=en> [retrieved on 2005-11-22] * the whole document *	1-24	
L	ANONYMOUS: "SUN ANNOUNCES SOLARIS 9 OPERATING ENVIRONMENT: WITH OVER 300 NEW FEATURES, CUSTOMERS SAVE MONEY AND TIME" SUN MICROSYSTEMS PRESS RELEASE, [Online] 22 May 2002 (2002-05-22), XP002355297 Retrieved from the Internet: URL: http://www.sun.com/smi/Press/sunflash/2002-05/sunflash.20020522.2.html> [retrieved on 2005-11-22] Used to assess the publication date of XP002355298		TECHNICAL FIELDS SEARCHED (IPC)
P, X	-& ANONYMOUS: "preap(1) - force a defunct process to be reaped by its parent" SOLARIS 9 REFERENCE MANUAL COLLECTION - MAN PAGES SECTION 1: USER COMMANDS, 22 May 2002 (2002-05-22), XP002355298 * the whole document *	1,4-8, 14,17	
3 The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 22 November 2005	Examiner Carciofi, A
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons a : member of the same patent family, corresponding document			

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EPO FORM P0469

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